

What is claimed is:

1. A method for alleviating register window size  
5 constraints in microprocessor computer system using  
register window architecture comprising:  
    providing a microprocessor having registers  
arranged in two or more register windows, each of said  
register windows comprising a plurality of registers;  
10      providing a first window pointer for designating  
one of said two or more register windows;  
    providing an effective current register pointer  
for designating one of said two or more register  
windows, said effective current register pointer  
15 allowing an application running on said microprocessor  
to access more than one of said at least two register  
windows for using data associated with said  
application.
- 20  
2. The method for alleviating register window  
size constraints in microprocessor computer system  
using register window architecture of Claim 1, wherein;  
    said first window pointer is a register and said  
25 effective current register pointer is a register.
3. The method for alleviating register window  
size constraints in microprocessor computer system  
30 using register window architecture of Claim 2, wherein;  
    said first window pointer is a current window  
pointer.
- 35  
4. The method for alleviating register window  
size constraints in microprocessor computer system  
using register window architecture of Claim 2, wherein;

said microprocessor is a SPARC microprocessor.

5        5. The method for alleviating register window  
size constraints in microprocessor computer system  
using register window architecture of Claim 1, wherein;  
on a context switch reload of said registers of  
said microprocessor, said register windows designated  
by said first window pointer and said effective current  
10 register pointer are reloaded.

6. The method for alleviating register window  
size constraints in microprocessor computer system  
15 using register window architecture of Claim 1, wherein;  
on a context switch reload of said registers of  
said microprocessor, said register window designated by  
said first window pointer, said register window  
designated by said effective current register pointer,  
20 and any register windows between said register window  
designated by said first window pointer and said  
register window designated by said effective current  
register pointer are reloaded.

25

7. The method for alleviating register window  
size constraints in microprocessor computer system  
using register window architecture of Claim 1, wherein;  
said effective current register pointer overrides  
30 said first window pointer when said effective current  
register pointer designates a register window different  
from a register window designated by said first window  
pointer.

35

8. A method for alleviating register window size constraints in microprocessor computer system using register window architecture comprising:

- providing a microprocessor having registers
- 5 arranged in two or more register windows, each of said register windows comprising a plurality of registers;
- providing a first window pointer for designating one of said two or more register windows, said first window pointer being a register;
- 10 providing an effective current register pointer for designating one of said two or more register windows, said effective current register pointer being a register, said effective current register pointer allowing a function running on said microprocessor to
- 15 access more than one of said at least two register windows for using data associated with said application.

- 20 9. A microprocessor in microprocessor computer system using register window architecture comprising:
- registers arranged in two or more register windows, each of said register windows comprising a plurality of registers;

- 25 a first window pointer for designating one of said two or more register windows;
- an effective current register pointer for designating one of said two or more register windows, said effective current register pointer allowing an
- 30 application running on said microprocessor to access more than one of said at least two register windows for using data associated with said application.

- 35 10. The microprocessor of Claim 9, wherein;
- said first window pointer is a register and said effective current register pointer is a register.

11. The microprocessor of Claim 10, wherein;  
said first window pointer is a current window  
5 pointer.

12. The microprocessor of Claim 10, wherein;  
said microprocessor is a SPARC microprocessor.  
10

13. The microprocessor of Claim 9, wherein;  
on a context switch reload of said registers of  
said microprocessor, said register windows designated  
15 by said first window pointer and said effective current  
register pointer are reloaded.

14. The microprocessor of Claim 9, wherein;  
20 said effective current register pointer overrides  
said first window pointer when said effective current  
register pointer designates a register window different  
from a register window designated by said first window  
pointer.  
25

15. A microprocessor in microprocessor computer  
system using register window architecture comprising:  
registers arranged in two or more register  
30 windows, each of said register windows comprising a  
plurality or registers;  
a first window pointer for designating one of said  
two or more register windows, said first window pointer  
being a register;  
35 an effective current register pointer for  
designating one of said two or more register windows,  
said effective current register pointer being a

register, said effective current register pointer allowing an application running on said microprocessor to access more than one of said at least two register windows for using data associated with said

5 application, wherein;

on a context switch reload of said registers of said microprocessor, said register window designated by said first window pointer, said register window designated by said effective current register pointer, and any register windows between said register window designated by said first window pointer and said register window designated by said effective current register pointer are reloaded, further wherein;

15 said effective current register pointer overrides said first window pointer when said effective current register pointer designates a register window different from a register window designated by said first window pointer.

20

16. A computer system, said computer system comprising:

A microprocessor using a register window architecture said microprocessor comprising:

25 registers arranged in two or more register windows, each of said register windows comprising a plurality or registers;

a first window pointer for designating one of said two or more register windows;

30 an effective current register pointer for designating one of said two or more register windows, said effective current register pointer allowing an application running on said microprocessor to access more than one of said at least two register windows for  
35 using data associated with said application.

17. The computer system of Claim 16, wherein;  
said first window pointer of said microprocessor  
is a register and said effective current register  
pointer is a register.

5

18. The computer system of Claim 17, wherein;  
said first window pointer of said microprocessor  
is a current window pointer.

10

19. The computer system of Claim 16, wherein;  
said microprocessor is a SPARC microprocessor.

15

20. The computer system of Claim 16, wherein;  
on a context switch reload of said registers of  
said microprocessor, said register windows designated  
by said first window pointer and said effective current  
register pointer are reloaded.

20

21. The computer system of Claim 16, wherein;  
on a context switch reload of said registers of  
said microprocessor, said register window designated by  
said first window pointer, said register window  
designated by said effective current register pointer,  
and any register windows between said register window  
designated by said first window pointer and said  
register window designated by said effective current  
register pointer are reloaded.

30

22. The computer system of Claim 16, wherein;  
said effective current register pointer of said  
microprocessor overrides said first window pointer when  
said effective current register pointer designates a

35

register window different from a register window designated by said first window pointer.

5           23. A computer system, said computer system comprising:

          A microprocessor using a register window architecture said microprocessor comprising:

          registers arranged in two or more register  
10 windows, each of said register windows comprising a plurality or registers;

          a first window pointer for designating one of said two or more register windows, said first window pointer being a register;

15           an effective current register pointer for designating one of said two or more register windows, said effective current register pointer being a register, said effective current register pointer allowing an application running on said microprocessor  
20 to access more than one of said at least two register windows for using data associated with said application, wherein;

          on a context switch reload of said registers of said microprocessor, said register window designated by  
25 said first window pointer, said register window designated by said effective current register pointer, and any register windows between said register window designated by said first window pointer and said register window designated by said effective current  
30 register pointer are reloaded, further wherein;

          said effective current register pointer overrides said first window pointer when said effective current register pointer designates a register window different from a register window designated by said first window  
35 pointer.